RF RANGE EXTENSION FOR EOD ROBOTS (U)

Hoa G. Nguyen
Space and Naval Warfare (SPAWAR) Systems Center Pacific
San Diego, CA

Kurt Hacker and Adam Shaker
Naval Explosive Ordnance Disposal Technology Division
Indian Head, MD

(U) ABSTRACT

(U) In 2006, reports from Operation Iraqi Freedom (OIF) and Operation Enduring Freedom (OEF) indicated that Explosive Ordnance Disposal (EOD) robots were experiencing significantly reduced operational range in theater compared to results from stateside tests. The Naval EOD Technology Division (NAVEODTECHDIV) initiated an effort to address this problem. This effort involves analysis of the problem, baseline field tests, and development and testing of solutions. Baseline tests and analysis quickly focused the remaining effort on the robots' performance in the presence of in-theater electromagnetic interference (EMI). A number of solutions were investigated, including shielding, directional antennas, antenna location, filtering, fiber-optic/RF relays, and other techniques. The final solution that allowed us to reach targeted operational range was a new set of radios for EOD robots. This paper describes the problem, solutions investigated, and the results.